Amendments to the Drawings:

The attached sheets of drawings include changes to Fig. 5 and Fig. 6.

Attachment: 2 Replacement Sheets

REMARKS/ARGUMENTS

In response to the Examiner's Office Action of October 19, 2006, Applicants would now make the following comments and considerations.

In regard to objections to the drawings and the fact that certain reference characters were not mentioned in the specification, this has now been corrected by indicating in the specification that Fig. 5 item 23 has now been added to the amended specification.

Additionally, two replacement pages are provided for Figs. 5 and 6 in order to designate a reference number for item 23A to indicate the Audit Disk.

In regard to certain rejections on Claim 5 and Claim 10 regarding 35 U.S.C. 112 in that there was not specified a particular function since the phraseology only showed claim elements. This phraseology has now been changed and should now be more proper in indicating the functionality of the clause:

> As was previously indicated, claims 1-4 and claims 14 -18 have been withdrawn leaving the remaining claims 5 – 13. These remaining claims have been rejected by the Examiner as being anticipated under article 102(b) by the Tam reference U.S. Patent 6,411,969.

With the amendments made to the claims and in view of the succeeding arguments, it is now to be stated by Applicants that Applicants will traverse the Examiner's contention in regard to the applicability of the cited Tam reference.

It should be indicated and further emphasized that the system described in the Tam reference does mention the use of FULL, ACCUMULATED, and INCREMENTAL dumps for database recovery, but <u>not</u> in any way which solves the problem of requiring the user to individually find and specify each individual dump to be accessed.

> Thus, in Tam a most formidable problem is still presented --- in that the user then has to <u>identify each dump by its name</u> and in <u>the correct order</u> when doing the recovery command.

As will be seen in Applicant's original and amended claims, Applicants offer a considerable and valuable optimization over the mere generalized statements referred to in the

Tam reference --- that is to say, Applicant's system optimizes use of the FULL, ACCUMULATED, and INCREMENTAL dumps which are to be used in the recovery process.

In the present configuration and operation of Applicant's system, the "dumps" <u>do not need</u> to be specifically specified by the user when accomplishing the recovery command. The MOST CURRENT command will cause the cited programs of DMDUMPDR, DMUTILITY, and RECOVERY to work together to "<u>automatically identify</u>" and provide the dumps required for recovery and these will be identified <u>in the correct</u> order and with <u>the correct name</u>. The Tam reference does <u>NOT</u> teach this! Applicants provide a much more sensible and optimal and efficient operation than anything shown by Tam for the recovery process.

Of course as Examiner indicated, the Tam reference does mention the use of FULL, ACCUMULATED, and INCREMENTAL dumps per database recovery but there is no consideration given to or no alleviation provided for the formidable task that the user would have to apply in order to identify each particular dump by name and apply it in the correct order of the recovery command.

As indicated heretofore Applicant's system offers an <u>optimization</u> of operation for the benefit of the user. The optimization is done beyond that which the Tam reference could possibly do, so that Applicant's system can provide an optimized operation to accomplish the FULL dump, the ACCUMULATED dump, and the INCREMENTAL dump in the proper sequence which are required in the recovery process.

As stated before, the <u>user does not need to specify</u> (in the recovery command) specific names of the dumps and the specific order of recovery operation. Here -- - the MOST CURRENT command, in whatever syntax it is applied, will cause the DMDUMPDIR, DMUTILITY and RECOVERY to work together where they identify the dump and provide the sequence of dumps required for recovery. Thus the dumps will be identified and put on with their proper name and in the correct order.

The significant feature of Applicant's system involves the optimization of the database recovery process in addition to external cataloging, that is to say, a provision for maintenance of

the order in which the dumps were created and their specific names where these items are maintained with information in the DMDUMPDIRECTORY.

Thus the Tam reference <u>does not solve or handle the formidable amount of problem</u> and <u>work</u> that would be required to optimize the database recovery process. And further, Applicants provide the information in the DMDUMPDIRECTORY in such a fashion that is usable by the various pieces of the software.

It might be helpful to look at the concept of DUMP. When DUMP is used as a verb then this means it refers to a disk dump which means the physical action of copying data from one location of data to another location of data or in another media. DUMP when used a noun refers to data residing on a disk and refers to the actual backup data which has a <u>particular name</u> and <u>date and time associated with it</u>.

The word DUMP is considered as a backup of the database which is created for the purpose of allowing recovery of data and, as stated, each DUMP has a specific name associated with it in addition to a particular date and time and so that it is uniquely identified.

When we use the term "FULL DUMP" this means the data of the database has been copied and moved to another location but note also that this particular move of data was given a specific name and a specific date to identify it and this information is indicated as an item which is placed in the Main Directory to indicate this action.

A FULL DUMP is a backup of the database that contains all the data files in the database as well as certain other files like the Control file and Description file. Sometimes the term "FULL DUMP FILE" is used as a term which is used to refer to the name of that dump as it is stored in the main directory.

We must also distinguish the factor of the "ACCUMULATED DUMP" --- this is a backup of data that contains only the data <u>blocks that have changed since the last full dump</u>. This accumulated dump does not include the control file, description file, or other system files as is done in a full dump.

It should be indicated that each dump is categorized as being a certain "type" of dump. Thus the types are (a) full (b) accumulated and (c) incremental --- and so called "type" information is stored in a directory that was maintained for each dump.

To solidify and explain further the meaning and activity of these terms, there will be shown below in List BB an example of what the "Main Directory" shows in its listing in order to specify which dump is which and what the list of dumps looks like.

<div align="center">

LIST BB

</div>

MDEDUMPTIME	% DUMPTIME
MDEDELETED	% VALID/INVALID
MDCOPYDUMP	% CREATED USING COPY COMMAND
MDDUPLICATEDUMP	% CREATED USING DUPLICATEDDUMP COMMAND
MDNEWFORMAT	% FORMAT
MDINCRDUMP	% INCREMENTAL
MDACCUMDUMP	% ACCUMULATED
MDETAPENAME	% DUMP NAME

Applicants thus teach a method to "automatically" retrieve a complete set of BACKUP NAMES which then save the user the task of typing up the backup names. An example of this list of backup names is shown above in the list labeled BB. This list is stored in the MAIN DIRECTORY.

The above information shown in list BB is stored for each and every entry for a backup/dump in the MAIN DIRECTORY. For example, there can be a maximum 2,000 dumps/backups recorded at this time in the Main Directory. Now, down below, there is list CC which is an example of the dumps that might be listed in the Main Directory. Here, it should be noted that in the list CC, only the name is given for this example but in reality all the above-mentioned information in list BB will also be present for each of the entries.

<div align="center">

LIST CC

</div>

(USER)BACKUP/FULL ON DISK

(USER)BACKUP/ACCUM ON DISK

(USER)BACKUP/FULL2 ON DISK

(USER)BACKUP/ACCUM2 ON DISK

(USER)BACKUP/INCR1 ON DISK

(USER)BACKUP/INCR2 ON DISK

(USER) BACKUP/INCR3 ON DISK

Whereby the MOST CURRENT retrieval would be the following:

(USER)BACKUP/FULL2 ON DISK followed by

(USER)BACKUP/ACCUM2 ON DISK followed by

(USER)BACKUP/INCR1 ON DISK followed by

(USER)BACKUP/INCR2 ON DISK followed by

(USER)BACKUP/INCR3 ON DISK

Above is an example of Backup Dumps listed in the Main Directory and each entry would include items in list BB.

The list CC is maintained in a dump directory library designated DUMPDIRLIB --- and it holds the names of all the backups created. Thus all the types of backups whether FULL, whether ACCUMULATED or whether INCREMENTAL are all listed here in the dump directory list.

This arrangement is helpful and useful and contributed to efficiency of operation in Applicant's present system because it enables the BACKUP RECOVERY and it also lists the dump names in the correct sequential order.

A.   As an example, if the user wanted to recover from MOST CURRENT FULL, the order of retrieval of the backups using the above list would be as follows:

(USER) BACKUP/FULL2ONDISK.

B.   As another example if the user wanted to recover the database using "MOST CURRENT" then the order of retrieval of backups using the above list CC would be as follows:

(USER)BACKUP/FULL2ONDISK--- followed by

(USER)BACKUP/ACCUM2ONDISK--- followed by

(USER)BACKUP/INCR1ONDISK.

Since Applicant's configuration and method determines the order of execution and in addition provides the backup names to be read out, then the need for detailed user input is <u>eliminated</u> in the selection process for the recovery operation.

DUMP information is always stored in the Main Directory in chronological order. For an "automated selection", dumps are accessed in sequence which is known as "correct sequential order" as follows.

1. The most recent FULL DUMP: if one does not exist in the Main Directory then no automated selection can occur.

2. The most recent ACCUMULATED dump if one exists

3. The most recent set of INCREMENTAL dumps(1 or more) if any exist: there is no limit for the number of incremental dumps.

Based on these rules, the only possible variations are:

1. FULL

2. FULL, ACCUMULATED

3. FULL, ACCUMULATED, set of INCREMENTAL (one or more until the end of directory is scanned)

4. FULL, set of INCREMENTAL (one or more until the end of directory is scanned).

As a result of the <u>automated sequence of items</u> shown, it will be understood that there is no longer any need for the user operator to do long detail work to define and specify the dump to be used in the recovery process. The above sequence known as the "correct sequential order" actually provides for execution of those dumps which are necessary to provide full recovery and to produce an updated disk for the database.

Applicants would now comment on each portion of the cited Tam references in order to indicate how they are not applicable to the technology provided by Applicant's present invention.

For example, in Tam column 1 at lines 20, lines 30, and lines 62, --- here Tam only makes generalized statements regarding the use of backups to update data in the database.

In Tam column 3 lines 33 as cited by the Examiner, there is merely a generalized statement about the structures of the data management system and its database.

In Tam column 5 lines 25 – 30 which Examiner cited, here Tam merely indicates that data management system software can use an audit trail to recover the database from an unusable state. Nothing here indicates how this is to be done or the technology for doing this.

In the Tam reference at column 6 lines 1 – 7, this merely indicates the use of a DMUTILITY program to make a copy of all or part of the database. No technology of how this is done is specified here.

In the Tam reference at column 8, here there is merely a definition of "checkpoint" as a place in the program where the program is to be stopped so that its current state can be written to disk. No technology is provided as to how this is done.

In the Tam reference at column 9 which involve the definitions of "DLT" and also "DMDUMPDIR" --- these only give a few generalized statements as to the definition of these elements and no technology as to how this is done is provided as is done in the present disclosure of the invention.

In the Tam reference at column 14 thereof cited by the Examiner, here at lines 9 – 13, lines 14 – 23 and lines 36 – 40, there are statements which mention the use of incremental dumps, accumulated dumps which can be used for backup. But note that <u>there is no technology which teaches the use of a Main Directory</u> and <u>which teaches the use of a correct order of sequence which can be automatically applied</u> in order to execute the recovery operation. Thus, such a few generalized statements do not constitute a teaching of the specific technology indicated and claimed in Applicant's present system.

Thus, it should now be emphasized that the Tam reference cited by the Examiner does not constitute any teaching or developed technology for providing for a Main Directory which has date and time stamps and which is arranged in a correct sequential order (as indicated in Applicant's claims), and which show the specific steps usable for database recovery without the need for long complicated access by the user of each particular dump and getting each particular time stamp of a dump. Thus, a tremendously efficient set of operations is provided in order to constitute the recovery operation.

Now in view of the factors involved here, which indicated that there is no way in which the TAM reference could be attributed as teaching the valuable timesaving operations provided

by Applicants then it must be seen that the Tam reference is inapplicable to the presently taught recovery technology. It should be understood that the TAM reference cannot be possibly considered as teaching the elements of Applicant's system in this case.

In this regard, it is now requested that the Examiner review Applicant's claims as a whole in their entirety in order to appreciate the express and efficient value thereof and subsequently provide a timely Notice of Allowance.

Respectfully submitted,
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